

## CLAIMS

1. A method of detecting the presence of digitally modulated data signals, the method including differentially decoding the digitally modulated signals into oversampled complex signals comprising  $n$  samples per bit, forming a running sum of successive groups of  $m$  samples, where  $m$  is less than  $n$ , deriving an absolute value for the successive running sums, weighting the absolute value and determining the presence of data by comparing the weighted absolute value with a threshold level.

2. A method as claimed in claim 1, characterised in that the absolute value is weighted by comparing the absolute value with a plurality of threshold values of different magnitudes, the difference between threshold values of successive magnitudes comprising a window having a weighting value assigned to it, and in that the weighted absolute value is a product of the absolute value and a determined weighting value.

3. A method as claimed in claim 1 or 2, <sup>Further comprising</sup> characterised by estimating the power level from the product of the absolute value and its <sup>and determined</sup> associated weighting value.

4. A method as claimed in claim 1 or 2 wherein the digitally modulated signals comprise 2-FSK signals, characterised in that a constellation containing differentially decoded imaginary values is used to form the running sum.

5. A receiver comprising means for receiving a digitally modulated signal, means for forming the digitally modulated signal into an oversampled, differentially decoded complex signal comprising a stream of  $n$  samples per bit, means for forming a running sum of successive groups of  $m$  samples, where  $m$  is less than  $n$ , means for deriving <sup>a respective</sup> absolute value for successive running sums, weighting means for weighting the <sup>respective</sup> absolute values,

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*claim 9*  
and a comparator for comparing ~~the~~ *weighted* absolute value with a threshold level and providing an output indicative of the presence of data in the received signals. *X*

- 5           6. A receiver as claimed in claim 5, characterised in that the weighting means comprises comparing means for comparing the derived absolute values with a plurality of threshold values and means for selecting a weighting value based on the result of the comparison, and in that multiplying means are provided for forming the weighted absolute value as a product of a  
10       respective absolute value and its associated weighting value.

7. A receiver as claimed in claim ~~5~~ *6*, characterised *for further comparison* by a power level estimator coupled to an output of the multiplying means.

- 15           8. A receiver as claimed in claim 5 or 6, fabricated as an integrated circuit.

9. *telemetry module* A telemetry module including a receiver as claimed in any one of claims 5 to 8.